



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,993	02/02/2004	Kazutoshi Kan	520.43378X00	5920

20457 7590 04/17/2007
ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-3873

EXAMINER

BOWERS, NATHAN ANDREW

ART UNIT	PAPER NUMBER
----------	--------------

1744

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/767,993

Applicant(s)

KAN ET AL.

Examiner

Nathan A. Bowers

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 020204.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1) The drawings are objected to under 37 CFR 1.83(a) because they fail to show "a first chamber" as described in the specification. While the drawings do show a plurality of air-lock type inlet/outlets in communication with a second chamber, they do not show a first chamber that includes a plurality of air-lock type inlet/outlets. There is no indication of a first chamber encompassing the air-lock type inlet/outlets.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

Art Unit: 1744

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

- 2) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the specification is absent of teachings regarding a "connection electrode" capable of communicating with the outer door of the first chamber. The specification does not describe the purpose of a connection electrode, the construction of the connection electrode, or how the connection electrode interacts with other structures. Teachings regarding a connection electrode simply do not appear in the specification.

- 3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 recites the limitation "said chamber" in line 4. It is not clear if this limitation refers to the "first chamber" or the "second chamber."

Art Unit: 1744

Claim 5 recites the limitation "the integrated vessel" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the medium" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 4) Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Felder (US 6467285).

With respect to claim 1, Felder discloses a culturing apparatus for culturing cellular tissues therein comprising a first chamber (Figure 3:60) and a second chamber (Figure 1:10). Column 5, line 25 to column 6, line 62 state that a first air-lock type inlet/outlet (Figure 3:62) and a second air-lock type inlet/outlet (Figure 3:61) are provided in the first chamber. The first chamber additionally comprises a manipulator (Figure 3:63) capable of being automatically controlled to move samples (Figure 3:3) through the first chamber and into the second chamber. Although Felder describes the second chamber as a freezer in the majority of the reference, Felder does indicate in column 6, lines 26-42 that the second chamber may be characterized by temperatures customary for cell culturing.

With respect to claim 4, Felder discloses the apparatus in claim 1 wherein a turntable (Figure 5:20) is provided within the second chamber. The turntable is capable of holding integrated vessels upon a plurality of racks (Figure 5:23). This is described in column 7, lines 3-34. As illustrated in Figure 3, the manipulator moves through one of the inlet/outlet doors (61) in order to move an integrated vessel (3) to the turntable.

With respect to claim 6, Felder discloses the apparatus in claim 1 wherein a control means is provided for controlling flow, temperature and humidity of gas communicating within the first chamber. This is described in column 5, line 54 to column 6, line 4.

With respect to claim 7, Felder discloses the apparatus in claim 4 wherein the turntable is rotatable at angles up to and greater than 360 degrees. Column 7, lines 17-20 state that an interchange mechanism (Figure 5:40) is provided for periodically changing the position of the integrated vessel.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1744

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5) Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Felder (US 6467285) in view of Burow (US 20020090320) and Henry (US 6974197).

In the previous 35 U.S.C. 102 rejection above, it was shown that Felder discloses a first chamber (Figure 3:60) comprising a plurality of air-lock type inlet/outlets (Figure 3:61 and Figure 3:62). As already discussed, a manipulator (Figure 3:63) is provided for moving samples (Figure 3:3). Since the opening and closing of the door pieces is controlled automatically, connection electrodes are used to allow communication between actuators at the doors and the remote controller.

Another reasonable interpretation of the Felder reference would entail identifying chamber (Figure 3:60) as an air-lock type inlet/outlet comprising two door pieces (Figure 3:61 and Figure 3:62) that communicate with the culture chamber and the exterior of the apparatus, respectively. In this interpretation, however, the Felder reference only discloses the use of a single air-lock type inlet/outlet rather than a plurality of air-lock type inlet/outlets.

Burow discloses a system for processing biological samples in which sample holders are automatically transferred between various work stations. Paragraphs [0016], [0077], [0091] and [0156] indicate that incubator comprising airlocks are commonly used in the art to store and culture cell samples. Burow further states in paragraph [0019] that incubators which utilize a plurality of access openings are well known in the art.

Felder and Burow are analogous art because they are from the same field of endeavor regarding the storage and incubation of biological samples.

At the time of the invention, it would have been obvious to provide the apparatus of Felder with a plurality of air-lock type inlet/outlets. This would have allowed one to simultaneously add or remove samples from the culturing device, and thereby increase the efficiency of the operation. Such an alteration to the construction of the Felder device would not require the addition of features not already described by Felder, but would only require the duplication of features (air-lock inlet/outlet) already presented. Mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See MPEP 2144.04.

The combination of Felder and Burow still differs from Applicant's claimed invention because the combination does not clearly describe the use of check valves capable of removing air from the air-lock inlet/outlets. Felder teaches in column 2, lines 31-53 that carbon dioxide and/or nitrogen gases are added to the air-lock inlet/outlets. The term "purge" implies that gases are also withdrawn during the addition of carbon dioxide and/or nitrogen. Felder, however, does not expressly disclose specific means for accomplishing this process.

Henry discloses an isolation chamber (Figure 3:20) connected to an air-lock type inlet/outlet (Figure 3:52) capable of accepting samples. Column 5, lines 40-67 state that the air-lock inlet/outlet is fitted with a connection tube (Figure 4:80) and a check valve (Figure 4:67) capable of removing air from the air-lock inlet/outlet.

At the time of the invention, it would have been obvious to ensure that the apparatus of Felder is provided with a check valve capable of regulating the removal of gases from the air-lock inlet/outlet just prior to the introduction of samples to the culture chamber. This would have been beneficial because it would have allowed one to decreased contamination. Purging the environment of the air-lock before opening the culture chamber door would have prevented the transfer of undesirable particulates.

6) Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Felder (US 6467285) in view of Barbera-Guillem (US 6673595).

Felder discloses the apparatus set forth in claim 1 as set forth in the 35 U.S.C. 102 rejection above. Felder additionally indicates in column 2, lines 31-53 that

Art Unit: 1744

dehumidified gases such as carbon dioxide and nitrogen are added to the first chamber. Column 10, lines 32-53 indicate the operation of the manipulator, as well as other components of the apparatus, is regulated using a control system. Felder, however, does not expressly disclose that means are provided for supplying a medium to the samples while they are positioned within the second chamber.

Barbera-Guillem discloses an automated incubation system that includes a culture chamber (Figure 2:10) provided with storage array (Figure 2:20) for holding cell samples. A manipulator (Figure 2:40) is used to automatically move the samples. Column 14, line 66 to column 15, line 46 teaches that a sample processing station (Figure 2:60) is positioned within the chamber in order to deliver a medium to the samples during storage/culturing.

Felder and Barbera-Guillem are analogous art because they are from the same field of endeavor regarding automated cell storage systems.

At the time of the invention, it would have been obvious to provide the second chamber disclosed by Felder with a mechanism capable of delivering a medium to the cell sample during the culturing process. This would have been advantageous because it would have allowed one to reliably deliver necessary nutrient media to various times without requiring that the samples be removed from the chamber and exposed to contaminants. This type of mechanism could also be used to add any solution required to complete analytical testing.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Silley (US 5861305), Findley (US 4892830) and Folsom (US 4111753) references disclose the state of the art regarding air-lock type inlet/outlets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan A. Bowers whose telephone number is (571) 272-8613. The examiner can normally be reached on Monday-Friday 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



NAB



GLADYS J. CORCORAN
SUPERVISORY PATENT EXAMINER